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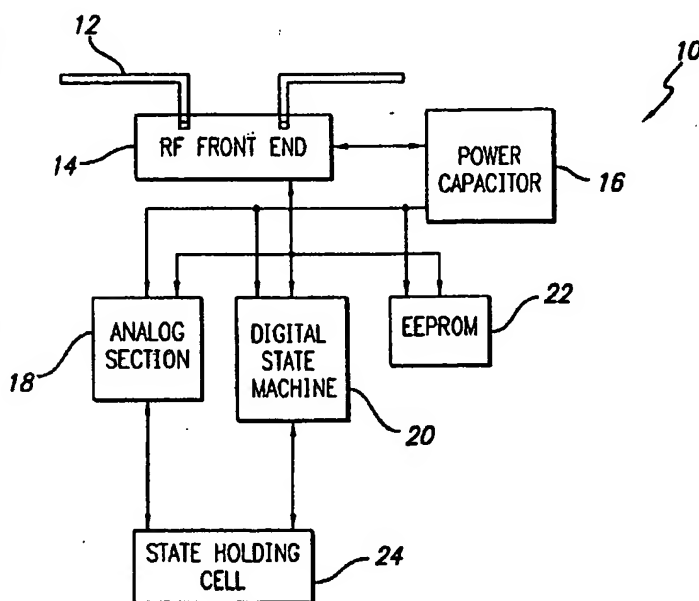
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10/056,398 23 January 2002 (23.01.2002) US(71) Applicant (for all designated States except US): INTER-
MEC IP CORP. [US/US]; 21900 Burbank Boulevard,
Woodland Hills, CA 91367-7418 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HEINRICH,
Harley, Kent [US/US]; 463 Gage Road, Brewster, NY10509 (US). PILLAI, Vijay [IN/US]; 75 Nethermont
Avenue, White Plains, NY 10603 (US). DIESKA, David,
E. [US/US]; 121 Citrus Tree Lane, Longwood, FL 32750
(US).(74) Agent: BERLINER, Brian, M.; O'MELVENY & MY-
ERS LLP, 400 South Hope Street, Los Angeles, CA 90071-
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[Continued on next page]

(54) Title: PASSIVE RFID TAG THAT RETAINS STATE AFTER TEMPORARY LOSS OF POWER



(57) Abstract: The present invention provides an RFID transponder that includes a state holding cell (24) that maintains the present state of the RFID transponder during temporary losses of power. After power is restored to the RFID transponder, the state holding cell restores the present state to the RFID transponder so that transactions with an RFID interrogator can continue without having re-transmit redundant commands. The RFID transponder further comprises an RF front end (14) adapted to receive an interrogating RF signal. An analog circuit (18) is coupled to the RF front end and is adapted to recover analog signals from the received interrogating RF signal. The analog circuit provides state information defining a desired state of the RFID transponder corresponding to the analog signals. A digital state machine (20) is coupled to the analog circuit and adapted to execute at least one command in accordance with the state information. A memory (22) is coupled to the digital state machine and is adapted to store and retrieve digital data

responsive to the at least one command executed by the digital state machine. A power capacitor (16) is coupled to the RF front end and derives a voltage rectified from the interrogating RF signal to charge the power capacitor. The power capacitor thereby provides electrical power for the analog circuit, the digital state machine and the memory. The state holding cell (24) is coupled to the analog circuit and the digital state machine and is adapted to maintain the state information during a loss in power provided by the power capacitor due to lapse in receipt of the interrogating RF signal by the RF front end.

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ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI,
SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

WPI Data, EP0-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 173 899 B1 (ROZIN ALEXANDER) 16 January 2001 (2001-01-16) column 3, line 65 -column 4, line 21; figure 1	1,7-15, 21-24
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 09, 30 September 1997 (1997-09-30) & JP 09 135481 A (TOKAI RIKI CO LTD), 20 May 1997 (1997-05-20) abstract	1,7-15, 21-24
A	GB 2 333 495 A (PLESSEY TELECOMM) 28 July 1999 (1999-07-28) page 2, paragraph 2; figures page 8, line 11 - line 21 page 14, line 17 -page 15, line 3 -/-	1-24

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 6818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Heusler, N

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 39 07 519 A (TEXAS INSTRUMENTS DEUTSCHLAND) 20 September 1990 (1990-09-20) column 1, line 8-10, 22-34, 44-50 column 2, line 37-43 column 3, line 29-33 -----	1-24
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Information on patent family members

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